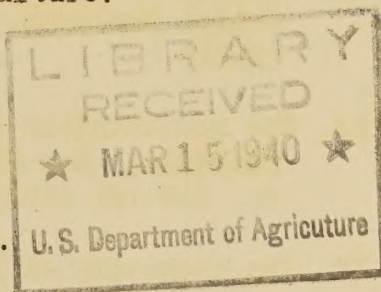


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Bureau of Agricultural Chemistry and Engineering  
U. S. Department of Agriculture.

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PUBLICATIONS ON LIGNIN

Industrial Farm Products Research Division.

U.S. Department of Agriculture

1. The chemistry of lignin. I. Lignin from corn cobs. Max Phillips. J. Amer. Chem. Soc., 49, pp. 2037-2040 (1927).
2. Lignin as a factor in the formation of hippuric acid. (Abst). F. A. Csonka, Max Phillips, and D. B. Jones. J. Biol. Chem. (Proc.), 78, p. 24 (1928).
3. The chemistry of lignin. II. Fractional extraction of lignin from corn cobs. Max Phillips. J. Amer. Chem. Soc., 50, pp. 1986-1989 (1928).
4. Studies in lignin metabolism. F. A. Csonka, Max Phillips, and D. B. Jones. J. Biol. Chem., 85, p. 65 (1928).
5. The demethoxylation of lignin in the animal body. Max Phillips, H. D. Weihe, D. B. Jones, and F. A. Csonka. Proceedings of the Society for Experimental Biology and Medicine, 26, pp. 320-321 (1929).
6. The chemistry of lignin. III. The destructive distillation of lignin from corn cobs. Max Phillips. J. Amer. Chem. Soc., 51, pp. 2420-2426 (1929).
7. The chemistry of lignin. IV. Lignin from oat hulls. Max Phillips. J. Amer. Chem. Soc., 52, pp. 793-797 (1930).
8. Lignin as a possible factor in lodging of cereals. Jehiel Davidson and Max Phillips. Science, 72, 1868, pp. 401-402 (1930).
9. The decomposition of lignified materials by soil microorganisms. Max Phillips, H. D. Weihe, and N. R. Smith. Soil Science, 30, 5, pp. 383-390 (1930).
10. The chemistry of lignin. V. The distillation of alkali lignin with zinc dust in an atmosphere of hydrogen. Max Phillips. J. Amer. Chem. Soc., 53, pp. 768-774 (1931).
11. Preparation of synthetic resins from alkali lignin. Max Phillips and H. D. Weihe. Ind. Eng. Chem., 23, 3, pp. 286-287 (1931).
12. The identification of phenols as the esters of 3,5-dinitrobenzoic acid. Max Phillips and G. L. Keenan. J. Amer. Chem. Soc., 53, pp. 1924-1928 (1931).
13. The isolation of normal propyl guaiacol as a degradation product of lignin. Max Phillips. Science, 73, 1899, pp. 568-570 (1931).



14. Studies of lignin in wheat straw with reference to lodging. Max Phillips, Jehiel Davidson, and H. D. Weihe. J. Agric. Research, 43, 7, pp. 619-626 (1931).
15. The quantitative determination of methoxyl, lignin, and cellulose in plant materials. Max Phillips. J. Assoc. Official Agricultural Chemists, 15, pp. 118-131 (1932).
16. The chemistry of lignin. VI. The distillation of alkali lignin with zinc dust in an atmosphere of hydrogen. Max Phillips and M. J. Goss. J. Am. Chem. Soc., 54, pp. 1518-1521 (1932).
17. Lignin-like complexes in fungi. Charles Thom and Max Phillips. J. Wash. Academy of Sciences, 22, 9, pp. 237-239 (1932).
18. The hydrolysis of lignin with 12% hydrochloric acid. Max Phillips and M. J. Goss. J. Amer. Chem. Soc., 54, pp. 3374-3377 (1932).
19. Lignin, farm by-product, now wasted, may supply cheap organic chemicals. Max Phillips. Yearbook of Agriculture (1932), p. 519. Separate No. 1261.
20. The chemistry of lignin. VII. The distillation of alkali lignin in reduced atmosphere of carbon dioxide. Max Phillips and M. J. Goss. Ind. Eng. Chem., 24, 12, p. 1436 (1932).
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22. The chemistry of lignin. VIII. The oxidation of alkali lignin. Max Phillips and M. J. Goss. J. Amer. Chem. Soc., 55, pp. 3466-3470 (1933).
23. Report on lignin. Max Phillips. J. Assoc. Official Agricultural Chemists, 16, pp. 476-479 (1933).
24. The ammoniation of waste sulfite liquor and its possible utilization as a fertilizer material. Max Phillips, M. J. Goss, B. E. Brown, and F. R. Reid. J. Wash. Acad. Sci., 24, p. 1 (1934).
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26. Improved method for determination of percentage acetyl in organic compounds. Max Phillips. Ind. Eng. Chem. 26, pp. 321-322 (1934).
27. Report on lignin. Max Phillips. J. Assoc. Official Agricultural Chemists, 17, 2, pp. 277-282 (1934).
28. The chemistry of lignin. IX. Lignin from barley straw. Max Phillips and M. J. Goss. J. Amer. Chem. Soc., 56, 12, pp. 2707-2710 (1934).



29. The microbiological decomposition of the constituents of alfalfa hay. Max Phillips, M. J. Goss, E. A. Beavens, and L. H. James. J. Agric. Research, 50, 9, pp. 761-775 (1935).
30. Report on lignin. Max Phillips. J. Assoc. Official Agricultural Chemists, 18, 3, pp. 387-390 (1935).
31. Composition of the leaves and stalks of barley at successive stages of growth, with special reference to the formation of lignin. Max Phillips and M. J. Goss. J. Agric. Research, 51, 4, pp. 301-319 (1935).
32. The occurrence of the methoxyl, ethoxyl, and methylene dioxide groups in substances of vegetable origin and a possible explanation of the mechanism for their formation by the plant. C. A. Browne and Max Phillips. J. Wash. Academy of Sciences, 25, 12, pp. 517-524 (1935).
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37. The simultaneous quantitative estimation of the percentages methoxyl and ethoxyl groups in organic substances. Max Phillips and M. J. Goss. J. Assoc. Official Agricultural Chemists, 20, pp. 292-297 (1937).
38. Effect of various carbohydrate materials on the determination of lignin by the fuming hydrochloric acid method. Max Phillips and M. J. Goss. J. Assoc. Official Agricultural Chemists, 21, pp. 140-145 (1938).
39. The hydrolysis of Willstätter lignin from wheat straw. Max Phillips. J. Assoc. Official Agricultural Chemists, 21, pp. 145-148 (1938).
40. An ozonizer for laboratory use. M. J. Goss and Max Phillips. J. Assoc. Official Agricultural Chemists, 21, pp. 327-331 (1938).

\* This publication is number III in the series on "Studies in the quantitative estimation of lignin."



41. The chemistry of lignin. XI. Lignin from wheat straw. Max Phillips and M. J. Goss. J. Biol. Chem., 125, 1, pp. 241-246 (1938).
42. The dehydrogenation of alkali lignin from corn cobs with selenium. Max Phillips and M. J. Goss. J. Assoc. Official Agricultural Chemists, 21, pp. 632-635 (1938).
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